

Replaced
By Paper 3

SEQUENCE LISTING

<110> Yoshinaga, Steven K.

<120> NOVEL POLYPEPTIDES INVOLVED IN IMMUNE RESPONSE

<130> A-579-D

<140> 09/264,527

<141> 1999-03-08

<160> 35

<170> PatentIn Ver. 2.1

<210> 1

<211> 600

<212> DNA

<213> mouse

<220>

<221> CDS

<222> Complement((1)..(600))

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ctt tta aca gga gaa atc aat ggc tgc gcc gat cat agg atg ttt tca 96
Leu Leu Thr Gly Glu Ile Asn Gly Ser Ala Asp His Arg Met Phe Ser
20 25 30

ttt cac aat gga ggt gta cag att tct tgt aaa tac cct gag act gtc 144
Phe His Asn Gly Gly Val Gln Ile Ser Cys Lys Tyr Pro Glu Thr Val
35 40 45

cag cag tta aaa atg cga ttg ttc aga gag aga gaa gtc ctc tgc gaa 192
Gln Gln Leu Lys Met Arg Leu Phe Arg Glu Arg Glu Val Leu Cys Glu
50 55 60

ctc acc aag acc aag gga agc gga aat gcg gtg tcc atc aag aat cca 240
Leu Thr Lys Thr Lys Gly Ser Gly Asn Ala Val Ser Ile Lys Asn Pro
65 70 75 80

atg ctc tgt cta tat cat ctg tca aac aac agc gtc tct ttt ttc cta 288
Met Leu Cys Leu Tyr His Leu Ser Asn Asn Ser Val Ser Phe Phe Leu
85 90 95

aac aac cca gac agc tcc cag gga agc tat tac ttc tgc agc ctg tcc 336
Asn Asn Pro Asp Ser Ser Gln Gly Ser Tyr Tyr Phe Cys Ser Leu Ser
100 105 110

att ttt gac cca cct cct ttt caa gaa agg aac ctt agt gga gga tat 384
Ile Phe Asp Pro Pro Pro Phe Gln Glu Arg Asn Leu Ser Gly Gly Tyr
115 120 125

ttg cat att tat gaa tcc cag ctg tgc tgc cag ctg aag ctc tgg cta 432
Leu His Ile Tyr Glu Ser Gln Leu Cys Cys Gln Leu Lys Leu Trp Leu
130 135 140

ccc gta ggg tgt gca gct ttc gtt gtg gta ctc ctt ttt gga tgc ata 480
Pro Val Gly Cys Ala Ala Phe Val Val Val Leu Leu Phe Gly Cys Ile
145 150 155 160

SEQUENCE LISTING

ctt atc atc tgg ttt tca aaa aag aaa tac gga tcc agt gtg cat gac 528
Leu Ile Ile Trp Phe Ser Lys Lys Lys Tyr Gly Ser Ser Val His Asp
165 170 175

cct aat agt gaa tac atg ttc atg gcg gca gtc aac aca aac aaa aag 576
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180 185 190

tct aga ctt gca ggt gtg acc tca 600
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195 200

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<213> mouse

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Phe His Asn Gly Gly Val Gln Ile Ser Cys Lys Tyr Pro Glu Thr Val
35 40 45
Gln Gln Leu Lys Met Arg Leu Phe Arg Glu Arg Glu Val Leu Cys Glu
50 55 60
Leu Thr Lys Thr Lys Gly Ser Gly Asn Ala Val Ser Ile Lys Asn Pro
65 70 75 80
Met Leu Cys Leu Tyr His Leu Ser Asn Asn Ser Val Ser Phe Phe Leu
85 90 95
Asn Asn Pro Asp Ser Ser Gln Gly Ser Tyr Tyr Phe Cys Ser Leu Ser
100 105 110
Ile Phe Asp Pro Pro Pro Phe Gln Glu Arg Asn Leu Ser Gly Gly Tyr
115 120 125
Leu His Ile Tyr Glu Ser Gln Leu Cys Cys Gln Leu Lys Leu Trp Leu
130 135 140
Pro Val Gly Cys Ala Ala Phe Val Val Val Leu Leu Phe Gly Cys Ile
145 150 155 160
Leu Ile Ile Trp Phe Ser Lys Lys Lys Tyr Gly Ser Ser Val His Asp
165 170 175
Pro Asn Ser Glu Tyr Met Phe Met Ala Ala Val Asn Thr Asn Lys Lys
180 185 190
Ser Arg Leu Ala Gly Val Thr Ser
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<213> mouse

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Met Lys Pro Tyr Phe Cys Arg Val Phe Val Phe Cys Phe Leu Ile Arg
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Phe His Asn Gly Gly Val Gln Ile Ser Cys Lys Tyr Pro Glu Thr Val
          35          40          45

Gln Gln Leu Lys Met Arg Leu Phe Arg Glu Arg Glu Val Leu Cys Glu
          50          55          60

Leu Thr Lys Thr Lys Gly Ser Gly Asn Ala Val Ser Ile Lys Asn Pro
 65          70          75          80

Met Leu Cys Leu Tyr His Leu Ser Asn Asn Ser Val Ser Phe Phe Leu
          85          90          95

Asn Asn Pro Asp Ser Ser Gln Gly Ser Tyr Tyr Phe Cys Ser Leu Ser
          100          105          110

Ile Phe Asp Pro Pro Pro Phe Gln Glu Arg Asn Leu Ser Gly Gly Tyr
          115          120          125

Leu His Ile Tyr Glu Ser Gln Leu Cys Cys Gln Leu Lys Leu Trp Leu
          130          135          140

Pro Val Gly Cys Ala Ala Phe Val Val Val Leu Leu Phe Gly Cys Ile
          145          150          155          160

Leu Ile Ile Trp Phe Ser Lys Lys Lys Tyr Gly Ser Ser Val His Asp
          165          170          175

Pro Asn Ser Glu Tyr Met Phe Met Ala Ala Val Asn Thr Asn Lys Lys
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Ser Arg Leu Ala Gly Val Thr Ser
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Val Thr Glu Asn Lys Ile Leu Val Lys Gln Ser Pro Leu Leu Val Val
          20          25          30

Asp Ser Asn Glu Val Ser Leu Ser Cys Arg Tyr Ser Tyr Asn Leu Leu
          35          40          45

Ala Lys Glu Phe Arg Ala Ser Leu Tyr Lys Gly Val Asn Ser Asp Val
          50          55          60

Glu Val Cys Val Gly Asn Gly Asn Phe Thr Tyr Gln Pro Gln Phe Arg
          65          70          75          80

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Ser Asn Ala Glu Phe Asn Cys Asp Gly Asp Phe Asp Asn Glu Thr Val
85 90 95
Thr Phe Arg Leu Trp Asn Leu His Val Asn His Thr Asp Ile Tyr Phe
100 105 110
Cys Lys Ile Glu Phe Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Arg
115 120 125
Ser Asn Gly Thr Ile Ile His Ile Lys Glu Lys His Leu Cys His Thr
130 135 140
Gln Ser Ser Pro Lys Leu Phe Trp Ala Leu Val Val Val Ala Gly Val
145 150 155 160
Leu Phe Cys Tyr Gly Leu Leu Val Thr Val Ala Leu Cys Val Ile Trp
165 170 175
Thr Asn Ser Arg Arg Asn Arg Leu Leu Gln Val Thr Thr Met Asn Met
180 185 190
Thr Pro Arg Arg Pro Gly Leu Thr Arg Lys Pro Tyr Gln Pro Tyr Ala
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Pro Ala Arg Asp Phe Ala Ala Tyr Arg Pro
210 215

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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Synthetic
Oglionucleotide

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Leu Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
35 40 45
Val Xaa Xaa Ser Cys Xaa Tyr Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
50 55 60
Xaa Xaa Xaa Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Val Xaa Xaa Cys Xaa
65 70 75 80
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
85 90 95
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Asn Xaa Xaa Val Xaa Phe Xaa Leu
100 105 110
Xaa Asn Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Phe Cys Xaa Xaa Xaa
115 120 125
Xaa Xaa Xaa Pro Pro Pro Xaa Xaa Xaa Xaa Xaa Xaa Ser Xaa Gly Xaa
130 135 140

Xaa Xaa His Ile Xaa Glu Xaa Xaa Leu Cys Xaa Xaa Xaa Xaa Xaa Xaa
145 150 155 160
Lys Leu Xaa Trp Xaa Leu Xaa Val Xaa Xaa Xaa Xaa Xaa Phe Xaa Xaa
165 170 175
Xaa Xaa Leu Leu Xaa Xaa Xaa Xaa Leu Xaa Xaa Ile Trp Xaa Xaa Xaa
180 185 190
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Xaa
195 200 205
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg
210 215 220
Xaa Xaa Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
225 230

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<212> DNA
<213> mouse

<220>
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<222> Complement((1)..(966))

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gtt tgg aag aag ctc cat gtt tct agc ggg ttc ttt tct ggt ctt ggt 96
Val Trp Lys Lys Leu His Val Ser Ser Gly Phe Phe Ser Gly Leu Gly
20 25 30
ctg ttc ttg ctg ctg ttg agc agc ctc tgt gct gcc tct gca gag act 144
Leu Phe Leu Leu Leu Ser Ser Leu Cys Ala Ala Ser Ala Glu Thr
35 40 45
gaa gtc ggt gca atg gtg ggc agc aat gtg gtg ctc agc tgc att gac 192
Glu Val Gly Ala Met Val Gly Ser Asn Val Val Leu Ser Cys Ile Asp
50 55 60
ccc cac aga cgc cat ttc aac ttg agt ggt ctg tat gtc tat tgg caa 240
Pro His Arg Arg His Phe Asn Leu Ser Gly Leu Tyr Val Tyr Trp Gln
65 70 75 80
atc gaa aac cca gaa gtt tcg gtg act tac tac ctg cct tac aag tct 288
Ile Glu Asn Pro Glu Val Ser Val Thr Tyr Tyr Leu Pro Tyr Lys Ser
85 90 95
cca ggg atc aat gtg gac agt tcc tac aag aac agg ggc cat ctg tcc 336
Pro Gly Ile Asn Val Asp Ser Ser Tyr Lys Asn Arg Gly His Leu Ser
100 105 110
ctg gac tcc atg aag cag ggt aac ttc tct ctg tac ctg aag aat gtc 384
Leu Asp Ser Met Lys Gln Gly Asn Phe Ser Leu Tyr Leu Lys Asn Val
115 120 125
acc cct cag gat acc cag gag ttc aca tgc cgg gta ttt atg aat aca 432
Thr Pro Gln Asp Thr Gln Glu Phe Thr Cys Arg Val Phe Met Asn Thr

130	135	140	
gcc aca gag tta gtc aag atc ttg gaa gag gtg gtc agg ctg cgt gtg Ala Thr Glu Leu Val Lys Ile Leu Glu Glu Val Val Arg Leu Arg Val 145 150 155 160			480
gca gca aac ttc agt aca cct gtc atc agc acc tct gat agc tcc aac Ala Ala Asn Phe Ser Thr Pro Val Ile Ser Thr Ser Asp Ser Ser Asn 165 170 175			528
ccg ggc cag gaa cgt acc tac acc tgc atg tcc aag aat ggc tac cca Pro Gly Gln Glu Arg Thr Tyr Thr Cys Met Ser Lys Asn Gly Tyr Pro 180 185 190			576
gag ccc aac ctg tat tgg atc aac aca acg gac aat agc cta ata gac Glu Pro Asn Leu Tyr Trp Ile Asn Thr Thr Asp Asn Ser Leu Ile Asp 195 200 205			624
acg gct ctg cag aat aac act gtc tac ttg aac aag ttg ggc ctg tat Thr Ala Leu Gln Asn Asn Thr Val Tyr Leu Asn Lys Leu Gly Leu Tyr 210 215 220			672
gat gta atc agc aca tta agg ctc cct tgg aca tct cgt ggg gat gtt Asp Val Ile Ser Thr Leu Arg Leu Pro Trp Thr Ser Arg Gly Asp Val 225 230 235 240			720
ctg tgc tgc gta gag aat gtg gct ctc cac cag aac atc act agc att Leu Cys Cys Val Glu Asn Val Ala Leu His Gln Asn Ile Thr Ser Ile 245 250 255			768
agc cag gca gaa agt ttc act gga aat aac aca aag aac cca cag gaa Ser Gln Ala Glu Ser Phe Thr Gly Asn Asn Thr Lys Asn Pro Gln Glu 260 265 270			816
acc cac aat aat gag tta aaa gtc ctt gtc ccc gtc ctt gct gta ctg Thr His Asn Asn Glu Leu Lys Val Leu Val Pro Val Leu Ala Val Leu 275 280 285			864
gcg gca gcg gca ttc gtt tcc ttc atc ata tac aga cgc acg cgt ccc Ala Ala Ala Phe Val Ser Phe Ile Ile Tyr Arg Arg Thr Arg Pro 290 295 300			912
cac cga agc tat aca gga ccc aag act gta cag ctt gaa ctt aca gac His Arg Ser Tyr Thr Gly Pro Lys Thr Val Gln Leu Glu Leu Thr Asp 305 310 315 320			960
cac gcc His Ala			966

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 <211> 322
 <212> PRT
 <213> mouse

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 20 25 30
 Leu Phe Leu Leu Leu Leu Ser Ser Leu Cys Ala Ala Ser Ala Glu Thr
 35 40 45

Glu Val Gly Ala Met Val Gly Ser Asn Val Val Leu Ser Cys Ile Asp
 50 55 60
 Pro His Arg Arg His Phe Asn Leu Ser Gly Leu Tyr Val Tyr Trp Gln
 65 70 75 80
 Ile Glu Asn Pro Glu Val Ser Val Thr Tyr Tyr Leu Pro Tyr Lys Ser
 85 90 95
 Pro Gly Ile Asn Val Asp Ser Ser Tyr Lys Asn Arg Gly His Leu Ser
 100 105 110
 Leu Asp Ser Met Lys Gln Gly Asn Phe Ser Leu Tyr Leu Lys Asn Val
 115 120 125
 Thr Pro Gln Asp Thr Gln Glu Phe Thr Cys Arg Val Phe Met Asn Thr
 130 135 140
 Ala Thr Glu Leu Val Lys Ile Leu Glu Glu Val Val Arg Leu Arg Val
 145 150 155 160
 Ala Ala Asn Phe Ser Thr Pro Val Ile Ser Thr Ser Asp Ser Ser Asn
 165 170 175
 Pro Gly Gln Glu Arg Thr Tyr Thr Cys Met Ser Lys Asn Gly Tyr Pro
 180 185 190
 Glu Pro Asn Leu Tyr Trp Ile Asn Thr Thr Asp Asn Ser Leu Ile Asp
 195 200 205
 Thr Ala Leu Gln Asn Asn Thr Val Tyr Leu Asn Lys Leu Gly Leu Tyr
 210 215 220
 Asp Val Ile Ser Thr Leu Arg Leu Pro Trp Thr Ser Arg Gly Asp Val
 225 230 235 240
 Leu Cys Cys Val Glu Asn Val Ala Leu His Gln Asn Ile Thr Ser Ile
 245 250 255
 Ser Gln Ala Glu Ser Phe Thr Gly Asn Asn Thr Lys Asn Pro Gln Glu
 260 265 270
 Thr His Asn Asn Glu Leu Lys Val Leu Val Pro Val Leu Ala Val Leu
 275 280 285
 Ala Ala Ala Ala Phe Val Ser Phe Ile Ile Tyr Arg Arg Thr Arg Pro
 290 295 300
 His Arg Ser Tyr Thr Gly Pro Lys Thr Val Gln Leu Glu Leu Thr Asp
 305 310 315 320
 His Ala

<210> 8
 <211> 322
 <212> PRT
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 <400> 8

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<210> 9
<211> 306
<212> PRT
<213> mouse

<400> 9
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Gln Val Ser Ser Asp Val Asp Glu Gln Leu Ser Lys Ser Val Lys Asp
35 40 45
Lys Val Leu Leu Pro Cys Arg Tyr Asn Ser Pro His Glu Asp Glu Ser
50 55 60
Glu Asp Arg Ile Tyr Trp Gln Lys His Asp Lys Val Val Leu Ser Val
65 70 75 80
Ile Ala Gly Lys Leu Lys Val Trp Pro Glu Tyr Lys Asn Arg Thr Leu
85 90 95
Tyr Asp Asn Thr Thr Tyr Ser Leu Ile Ile Leu Gly Leu Val Leu Ser
100 105 110
Asp Arg Gly Thr Tyr Ser Cys Val Val Gln Lys Lys Glu Arg Gly Thr
115 120 125
Tyr Glu Val Lys His Leu Ala Leu Val Lys Leu Ser Ile Lys Ala Asp
130 135 140
Phe Ser Thr Pro Asn Ile Thr Glu Ser Gly Asn Pro Ser Ala Asp Thr
145 150 155 160
Lys Arg Ile Thr Cys Phe Ala Ser Gly Gly Phe Pro Lys Pro Arg Phe
165 170 175
Ser Trp Leu Glu Asn Gly Arg Glu Leu Pro Gly Ile Asn Thr Thr Ile
180 185 190
Ser Gln Asp Pro Glu Ser Glu Leu Tyr Thr Ile Ser Ser Gln Leu Asp
195 200 205
Phe Asn Thr Thr Arg Asn His Thr Ile Lys Cys Leu Ile Lys Tyr Gly
210 215 220
Asp Ala His Val Ser Glu Asp Phe Thr Trp Glu Lys Pro Pro Glu Asp
225 230 235 240
Pro Pro Asp Ser Lys Asn Thr Leu Val Leu Phe Gly Ala Gly Phe Gly
245 250 255
Ala Val Ile Thr Val Val Val Ile Val Val Ile Ile Lys Cys Phe Cys
260 265 270
Lys His Arg Ser Cys Phe Arg Arg Asn Glu Ala Ser Arg Glu Thr Asn
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Asn Ser Leu Thr Phe Gly Pro Glu Glu Ala Leu Ala Glu Gln Thr Val
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Phe Leu

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Oglionucleotide

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Leu	Phe	Xaa 35	Leu	Leu	Xaa	Xaa	Xaa 40	Ser	Xaa	Xaa	Xaa	Xaa 45	Xaa	Xaa	Xaa
Xaa	Xaa 50	Xaa	Xaa	Xaa	Xaa	Val 55	Xaa	Xaa	Xaa	Val	Xaa 60	Leu	Xaa	Cys	Xaa
Xaa 65	Xaa	Xaa	Xaa	Xaa	His 70	Xaa	Xaa	Xaa	Ser	Xaa 75	Xaa	Xaa	Xaa	Tyr	Trp 80
Gln	Xaa	Xaa	Xaa	Xaa 85	Xaa	Val	Xaa	Xaa	Xaa 90	Xaa	Xaa	Leu	Xaa	Xaa 95	Xaa
Xaa	Xaa	Xaa	Xaa 100	Xaa	Val	Xaa	Xaa	Xaa 105	Tyr	Lys	Asn	Arg	Xaa 110	Xaa	Xaa
Xaa	Leu	Xaa 115	Xaa	Xaa	Xaa	Xaa	Xaa 120	Xaa	Xaa	Ser	Leu	Xaa 125	Xaa	Xaa	Xaa
Xaa	Xaa 130	Xaa	Xaa	Asp	Xaa	Xaa 135	Xaa	Xaa	Xaa	Cys	Xaa 140	Val	Xaa	Xaa	Xaa
Xaa 145	Xaa	Xaa	Xaa	Xaa	Xaa 150	Xaa	Xaa	Xaa	Xaa	Xaa 155	Xaa	Val	Xaa	Leu	Xaa 160
Xaa	Xaa	Ala	Xaa	Phe 165	Ser	Thr	Pro	Xaa	Ile 170	Xaa	Xaa	Ser	Xaa	Xaa 175	Xaa
Xaa	Xaa	Xaa	Xaa 180	Xaa	Arg	Xaa	Xaa	Thr 185	Cys	Xaa	Xaa	Xaa	Xaa 190	Gly	Xaa
Pro	Xaa	Pro 195	Xaa	Xaa	Xaa	Trp	Xaa 200	Xaa	Asn	Xaa	Xaa	Xaa 205	Xaa	Xaa	Xaa
Ile	Xaa 210	Thr	Xaa	Xaa	Xaa	Xaa 215	Xaa	Xaa	Xaa	Xaa	Xaa 220	Xaa	Xaa	Xaa	Xaa
Xaa 225	Xaa	Xaa	Xaa	Xaa	Xaa 230	Xaa	Xaa	Xaa	Xaa	Xaa 235	Xaa	Thr	Xaa	Xaa	Xaa 240
Xaa	Xaa	Xaa	Xaa	Xaa 245	Xaa	Xaa	Xaa	Val	Xaa 250	Xaa	Xaa	Xaa	Xaa	Xaa 255	Xaa
Xaa	Xaa	Xaa	Xaa 260	Xaa	Xaa	Xaa	Xaa	Xaa 265	Xaa	Asn	Xaa	Xaa	Xaa 270	Xaa	Xaa

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Val Xaa Val Xaa Val Xaa Xaa
 275 280 285
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Phe Xaa Xaa Xaa Xaa Xaa
 290 295 300
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 305 310 315 320
 Xaa Glu Xaa Thr Xaa Xaa Xaa
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<220>
 <221> CDS
 <222> Complement((1)..(864))

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 cga gct gat act cag gag aag gaa gtc aga gcg atg gta ggc agc gac 96
 Arg Ala Asp Thr Gln Glu Lys Glu Val Arg Ala Met Val Gly Ser Asp
 20 25 30
 gtg gag ctc agc tgc gct tgc cct gaa gga agc cgt ttt gat tta aat 144
 Val Glu Leu Ser Cys Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn
 35 40 45
 gat gtt tac gta tat tgg caa acc agt gag tcg aaa acc gtg gtg acc 192
 Asp Val Tyr Val Tyr Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr
 50 55 60
 tac cac atc cca cag aac agc tcc ttg gaa aac gtg gac agc cgc tac 240
 Tyr His Ile Pro Gln Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr
 65 70 75 80
 cgg aac cga gcc ctg atg tca ccg gcc ggc atg ctg cgg ggc gac ttc 288
 Arg Asn Arg Ala Leu Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe
 85 90 95
 tcc ctg cgc ttg ttc aac gtc acc ccc cag gac gag cag aag ttt cac 336
 Ser Leu Arg Leu Phe Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His
 100 105 110
 tgc ctg gtg ttg agc caa tcc ctg gga ttc cag gag gtt ttg agc gtt 384
 Cys Leu Val Leu Ser Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Val
 115 120 125
 gag gtt aca ctg cat gtg gca gca aac ttc agc gtg ccc gtc gtc agc 432
 Glu Val Thr Leu His Val Ala Ala Asn Phe Ser Val Pro Val Val Ser
 130 135 140
 gcc ccc cac agc ccc tcc cag gat gag ctc acc ttc acg tgt aca tcc 480
 Ala Pro His Ser Pro Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser
 145 150 155 160
 ata aac ggc tac ccc agg ccc aac gtg tac tgg atc aat aag acg gac 528

Ile	Asn	Gly	Tyr	Pro	Arg	Pro	Asn	Val	Tyr	Trp	Ile	Asn	Lys	Thr	Asp		
				165					170					175			
aac	agc	ctg	ctg	gac	cag	gct	ctg	cag	aat	gac	acc	gtc	ttc	ttg	aac	576	
Asn	Ser	Leu	Leu	Asp	Gln	Ala	Leu	Gln	Asn	Asp	Thr	Val	Phe	Leu	Asn		
			180					185					190				
atg	cgg	ggc	ttg	tat	gac	gtg	gtc	agc	gtg	ctg	agg	atc	gca	cgg	acc	624	
Met	Arg	Gly	Leu	Tyr	Asp	Val	Val	Ser	Val	Leu	Arg	Ile	Ala	Arg	Thr		
		195					200					205					
ccc	agc	gtg	aac	att	ggc	tgc	tgc	ata	gag	aac	gtg	ctt	ctg	cag	cag	672	
Pro	Ser	Val	Asn	Ile	Gly	Cys	Cys	Ile	Glu	Asn	Val	Leu	Leu	Gln	Gln		
	210					215					220						
aac	ctg	act	gtc	ggc	agc	cag	aca	gga	aat	gac	atc	gga	gag	aga	gac	720	
Asn	Leu	Thr	Val	Gly	Ser	Gln	Thr	Gly	Asn	Asp	Ile	Gly	Glu	Arg	Asp		
	225				230					235					240		
aag	atc	aca	gag	aat	cca	gtc	agt	acc	ggc	gag	aaa	aac	gcg	gcc	acg	768	
Lys	Ile	Thr	Glu	Asn	Pro	Val	Ser	Thr	Gly	Glu	Lys	Asn	Ala	Ala	Thr		
				245					250					255			
tgg	agc	atc	ctg	gct	gtc	ctg	tgc	ctg	ctt	gtg	gtc	gtg	gcg	gtg	gcc	816	
Trp	Ser	Ile	Leu	Ala	Val	Leu	Cys	Leu	Leu	Val	Val	Val	Ala	Val	Ala		
			260				265						270				
ata	ggc	tgg	gtg	tgc	agg	gac	cga	tgc	ctc	caa	cac	agc	tat	gca	ggt	864	
Ile	Gly	Trp	Val	Cys	Arg	Asp	Arg	Cys	Leu	Gln	His	Ser	Tyr	Ala	Gly		
		275					280					285					

<210> 12
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 <212> PRT
 <213> mouse

<400> 12
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 20 25 30
 Val Glu Leu Ser Cys Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn
 35 40 45
 Asp Val Tyr Val Tyr Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr
 50 55 60
 Tyr His Ile Pro Gln Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr
 65 70 75 80
 Arg Asn Arg Ala Leu Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe
 85 90 95
 Ser Leu Arg Leu Phe Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His
 100 105 110
 Cys Leu Val Leu Ser Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Val
 115 120 125
 Glu Val Thr Leu His Val Ala Ala Asn Phe Ser Val Pro Val Val Ser
 130 135 140

Ala Pro His Ser Pro Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser
145 150 155 160

Ile Asn Gly Tyr Pro Arg Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp
165 170 175

Asn Ser Leu Leu Asp Gln Ala Leu Gln Asn Asp Thr Val Phe Leu Asn
180 185 190

Met Arg Gly Leu Tyr Asp Val Val Ser Val Leu Arg Ile Ala Arg Thr
195 200 205

Pro Ser Val Asn Ile Gly Cys Cys Ile Glu Asn Val Leu Leu Gln Gln
210 215 220

Asn Leu Thr Val Gly Ser Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp
225 230 235 240

Lys Ile Thr Glu Asn Pro Val Ser Thr Gly Glu Lys Asn Ala Ala Thr
245 250 255

Trp Ser Ile Leu Ala Val Leu Cys Leu Leu Val Val Val Ala Val Ala
260 265 270

Ile Gly Trp Val Cys Arg Asp Arg Cys Leu Gln His Ser Tyr Ala Gly
275 280 285

<210> 13
<211> 267
<212> PRT
<213> Human

<400> 13
Glu Lys Glu Val Arg Ala Met Val Gly Ser Asp Val Glu Leu Ser Cys
1 5 10 15

Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn Asp Val Tyr Val Tyr
20 25 30

Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr Tyr His Ile Pro Gln
35 40 45

Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr Arg Asn Arg Ala Leu
50 55 60

Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe Ser Leu Arg Leu Phe
65 70 75 80

Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His Cys Leu Val Leu Ser
85 90 95

Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Val Glu Val Thr Leu His
100 105 110

Val Ala Ala Asn Phe Ser Val Pro Val Val Ser Ala Pro His Ser Pro
115 120 125

Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser Ile Asn Gly Tyr Pro
130 135 140

Arg Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp Asn Ser Leu Leu Asp

145 150 155 160
Gln Ala Leu Gln Asn Asp Thr Val Phe Leu Asn Met Arg Gly Leu Tyr
 165 170 175
Asp Val Val Ser Val Leu Arg Ile Ala Arg Thr Pro Ser Val Asn Ile
 180 185 190
Gly Cys Cys Ile Glu Asn Val Leu Leu Gln Gln Asn Leu Thr Val Gly
 195 200 205
Ser Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp Lys Ile Thr Glu Asn
 210 215 220
Pro Val Ser Thr Gly Glu Lys Asn Ala Ala Thr Trp Ser Ile Leu Ala
225 230 235 240
Val Leu Cys Leu Leu Val Val Val Ala Val Ala Ile Gly Trp Val Cys
 245 250 255
Arg Asp Arg Cys Leu Gln His Ser Tyr Ala Gly
 260 265

<210> 14
<211> 276
<212> PRT
<213> mouse

<400> 14
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Trp Gln Ile Glu Asn Pro Glu Val Ser Val Thr Tyr Tyr Leu Pro Tyr
 35 40 45
Lys Ser Pro Gly Ile Asn Val Asp Ser Ser Tyr Lys Asn Arg Gly His
50 55 60
Leu Ser Leu Asp Ser Met Lys Gln Gly Asn Phe Ser Leu Tyr Leu Lys
65 70 75 80
Asn Val Thr Pro Gln Asp Thr Gln Glu Phe Thr Cys Arg Val Phe Met
 85 90 95
Asn Thr Ala Thr Glu Leu Val Lys Ile Leu Glu Glu Val Val Arg Leu
 100 105 110
Arg Val Ala Ala Asn Phe Ser Thr Pro Val Ile Ser Thr Ser Asp Ser
 115 120 125
Ser Asn Pro Gly Gln Glu Arg Thr Tyr Thr Cys Met Ser Lys Asn Gly
130 135 140
Tyr Pro Glu Pro Asn Leu Tyr Trp Ile Asn Thr Thr Asp Asn Ser Leu
145 150 155 160
Ile Asp Thr Ala Leu Gln Asn Asn Thr Val Tyr Leu Asn Lys Leu Gly
 165 170 175
Leu Tyr Asp Val Ile Ser Thr Leu Arg Leu Pro Trp Thr Ser Arg Gly

180										185										190										
Asp	Val	Leu	Cys	Cys	Val	Glu	Asn	Val	Ala	Leu	His	Gln	Asn	Ile	Thr															
		195					200					205																		
Ser	Ile	Ser	Gln	Ala	Glu	Ser	Phe	Thr	Gly	Asn	Asn	Thr	Lys	Asn	Pro															
	210					215					220																			
Gln	Glu	Thr	His	Asn	Asn	Glu	Leu	Lys	Val	Leu	Val	Pro	Val	Leu	Ala															
	225				230					235					240															
Val	Leu	Ala	Ala	Ala	Ala	Phe	Val	Ser	Phe	Ile	Ile	Tyr	Arg	Arg	Thr															
				245					250					255																
Arg	Pro	His	Arg	Ser	Tyr	Thr	Gly	Pro	Lys	Thr	Val	Gln	Leu	Glu	Leu															
			260					265					270																	
Thr	Asp	His	Ala																											
		275																												

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 <211> 280
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Synthetic
 Oglionucleotide

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Xaa	Xaa	Pro	Xaa	Xaa	Xaa	Xaa	Phe	Xaa	Leu	Xaa	Xaa	Xaa	Tyr	Val	Tyr	
			20					25						30		
Trp	Gln	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Val	Thr	Tyr	Xaa	Xaa	Pro	Xaa	
	35							40				45				
Xaa	Ser	Xaa	Xaa	Xaa	Asn	Val	Asp	Ser	Xaa	Tyr	Xaa	Asn	Arg	Xaa	Xaa	
	50					55					60					
Xaa	Ser	Xaa	Xaa	Xaa	Met	Xaa	Xaa	Gly	Xaa	Phe	Ser	Leu	Xaa	Leu	Xaa	
	65				70					75					80	
Asn	Val	Thr	Pro	Gln	Asp	Xaa	Gln	Xaa	Phe	Xaa	Cys	Xaa	Val	Xaa	Xaa	
				85					90					95		
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Leu	Xaa	Xaa	Xaa	Val	Xaa	Leu	
			100					105					110			
Xaa	Val	Ala	Ala	Asn	Phe	Ser	Xaa	Pro	Val	Xaa	Ser	Xaa	Xaa	Xaa	Ser	
	115						120					125				
Xaa	Xaa	Xaa	Xaa	Xaa	Glu	Xaa	Thr	Xaa	Thr	Cys	Xaa	Ser	Xaa	Asn	Gly	
	130				135						140					
Tyr	Pro	Xaa	Pro	Asn	Xaa	Tyr	Trp	Ile	Asn	Xaa	Thr	Asp	Asn	Ser	Leu	
	145				150					155					160	
Xaa	Asp	Xaa	Ala	Leu	Gln	Asn	Xaa	Thr	Val	Xaa	Leu	Asn	Xaa	Xaa	Gly	
				165					170						175	

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<210> 16
<211> 1294
<212> DNA
<213> Human

<220>
<221> 5'UTR
<222> (1)..(199)

<220>
<221> CDS
<222> (200)..(1105)

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cgctccgcggg agcgcaggtta gagccgatct cccgcgcccc gaggttgctc ctctccgagg 120
tctcccgcgg cccaagttct ccgcgccccg aggtctccgc gcccgcagggt ctccgcggcc 180
cgaggtcttcc gcccgcacc atg cgg ctg ggc agt cct gga ctg ctc ttc ctg 232
                Met Arg Leu Gly Ser Pro Gly Leu Leu Phe Leu
                1                      5                      10
ctc ttc agc agc ctt cga gct gat act cag gag aag gaa gtc aga gcg 280
Leu Phe Ser Ser Leu Arg Ala Asp Thr Gln Glu Lys Glu Val Arg Ala
                15                      20                      25
atg gta ggc agc gac gtg gag ctc agc tgc gct tgc cct gaa gga agc 328
Met Val Gly Ser Asp Val Glu Leu Ser Cys Ala Cys Pro Glu Gly Ser
                30                      35                      40
cgt ttt gat tta aat gat gtt tac gta tat tgg caa acc agt gag tcg 376
Arg Phe Asp Leu Asn Asp Val Tyr Val Tyr Trp Gln Thr Ser Glu Ser
                45                      50                      55
aaa acc gtg gtg acc tac cac atc cca cag aac agc tcc ttg gaa aac 424
Lys Thr Val Val Thr Tyr His Ile Pro Gln Asn Ser Ser Leu Glu Asn
                60                      65                      70                      75
gtg gac agc cgc tac cgg aac cga gcc ctg atg tca ccg gcc ggc atg 472
Val Asp Ser Arg Tyr Arg Asn Arg Ala Leu Met Ser Pro Ala Gly Met

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				80				85				90							
ctg	cgg	ggc	gac	ttc	tcc	ctg	cgc	ttg	ttc	aac	gtc	acc	ccc	cag	gac	520			
Leu	Arg	Gly	Asp	Phe	Ser	Leu	Arg	Leu	Phe	Asn	Val	Thr	Pro	Gln	Asp				
95				100				105											
gag	cag	aag	ttt	cac	tgc	ctg	gtg	ttg	agc	caa	tcc	ctg	gga	ttc	cag	568			
Glu	Gln	Lys	Phe	His	Cys	Leu	Val	Leu	Ser	Gln	Ser	Leu	Gly	Phe	Gln				
110				115				120											
gag	gtt	ttg	agc	gtt	gag	gtt	aca	ctg	cat	gtg	gca	gca	aac	ttc	agc	616			
Glu	Val	Leu	Ser	Val	Glu	Val	Thr	Leu	His	Val	Ala	Ala	Asn	Phe	Ser				
125				130				135											
gtg	ccc	gtc	gtc	agc	gcc	ccc	cac	agc	ccc	tcc	cag	gat	gag	ctc	acc	664			
Val	Pro	Val	Val	Ser	Ala	Pro	His	Ser	Pro	Ser	Gln	Asp	Glu	Leu	Thr				
140				145				150				155							
ttc	acg	tgt	aca	tcc	ata	aac	ggc	tac	ccc	agg	ccc	aac	gtg	tac	tgg	712			
Phe	Thr	Cys	Thr	Ser	Ile	Asn	Gly	Tyr	Pro	Arg	Pro	Asn	Val	Tyr	Trp				
160				165				170											
atc	aat	aag	acg	gac	aac	agc	ctg	ctg	gac	cag	gct	ctg	cag	aat	gac	760			
Ile	Asn	Lys	Thr	Asp	Asn	Ser	Leu	Leu	Asp	Gln	Ala	Leu	Gln	Asn	Asp				
175				180				185											
acc	gtc	ttc	ttg	aac	atg	cgg	ggc	ttg	tat	gac	gtg	gtc	agc	gtg	ctg	808			
Thr	Val	Phe	Leu	Asn	Met	Arg	Gly	Leu	Tyr	Asp	Val	Val	Ser	Val	Leu				
190				195				200											
agg	atc	gca	cgg	acc	ccc	agc	gtg	aac	att	ggc	tgc	tgc	ata	gag	aac	856			
Arg	Ile	Ala	Arg	Thr	Pro	Ser	Val	Asn	Ile	Gly	Cys	Cys	Ile	Glu	Asn				
205				210				215											
gtg	ctt	ctg	cag	cag	aac	ctg	act	gtc	ggc	agc	cag	aca	gga	aat	gac	904			
Val	Leu	Leu	Gln	Gln	Asn	Leu	Thr	Val	Gly	Ser	Gln	Thr	Gly	Asn	Asp				
220				225				230				235							
atc	gga	gag	aga	gac	aag	atc	aca	gag	aat	cca	gtc	agt	acc	ggc	gag	952			
Ile	Gly	Glu	Arg	Asp	Lys	Ile	Thr	Glu	Asn	Pro	Val	Ser	Thr	Gly	Glu				
240				245				250											
aaa	aac	gcg	gcc	acg	tgg	agc	atc	ctg	gct	gtc	ctg	tgc	ctg	ctt	gtg	1000			
Lys	Asn	Ala	Ala	Thr	Trp	Ser	Ile	Leu	Ala	Val	Leu	Cys	Leu	Leu	Val				
255				260				265											
gtc	gtg	gcg	gtg	gcc	ata	ggc	tgg	gtg	tgc	agg	gac	cga	tgc	ctc	caa	1048			
Val	Val	Ala	Val	Ala	Ile	Gly	Trp	Val	Cys	Arg	Asp	Arg	Cys	Leu	Gln				
270				275				280											
cac	agc	tat	gca	ggt	gcc	tgg	gct	gtg	agt	ccg	gag	aca	gag	ctc	act	1096			
His	Ser	Tyr	Ala	Gly	Ala	Trp	Ala	Val	Ser	Pro	Glu	Thr	Glu	Leu	Thr				
285				290				295											
ggc	cac	gtt	tgacc	ggagc	tcacc	gccca	gagc	gtggac	agg	gcttccg						1145			
Gly	His	Val																	
300																			

<210> 17
 <211> 302
 <212> PRT
 <213> Human

<400> 17

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Arg	Ala	Asp	Thr	Gln	Glu	Lys	Glu	Val	Arg	Ala	Met	Val	Gly	Ser	Asp
			20					25					30		
Val	Glu	Leu	Ser	Cys	Ala	Cys	Pro	Glu	Gly	Ser	Arg	Phe	Asp	Leu	Asn
		35					40					45			
Asp	Val	Tyr	Val	Tyr	Trp	Gln	Thr	Ser	Glu	Ser	Lys	Thr	Val	Val	Thr
	50					55					60				
Tyr	His	Ile	Pro	Gln	Asn	Ser	Ser	Leu	Glu	Asn	Val	Asp	Ser	Arg	Tyr
65					70					75					80
Arg	Asn	Arg	Ala	Leu	Met	Ser	Pro	Ala	Gly	Met	Leu	Arg	Gly	Asp	Phe
				85					90					95	
Ser	Leu	Arg	Leu	Phe	Asn	Val	Thr	Pro	Gln	Asp	Glu	Gln	Lys	Phe	His
			100					105					110		
Cys	Leu	Val	Leu	Ser	Gln	Ser	Leu	Gly	Phe	Gln	Glu	Val	Leu	Ser	Val
		115					120					125			
Glu	Val	Thr	Leu	His	Val	Ala	Ala	Asn	Phe	Ser	Val	Pro	Val	Val	Ser
		130				135					140				
Ala	Pro	His	Ser	Pro	Ser	Gln	Asp	Glu	Leu	Thr	Phe	Thr	Cys	Thr	Ser
145					150					155					160
Ile	Asn	Gly	Tyr	Pro	Arg	Pro	Asn	Val	Tyr	Trp	Ile	Asn	Lys	Thr	Asp
				165					170					175	
Asn	Ser	Leu	Leu	Asp	Gln	Ala	Leu	Gln	Asn	Asp	Thr	Val	Phe	Leu	Asn
			180					185					190		
Met	Arg	Gly	Leu	Tyr	Asp	Val	Val	Ser	Val	Leu	Arg	Ile	Ala	Arg	Thr
		195					200					205			
Pro	Ser	Val	Asn	Ile	Gly	Cys	Cys	Ile	Glu	Asn	Val	Leu	Leu	Gln	Gln
	210					215					220				
Asn	Leu	Thr	Val	Gly	Ser	Gln	Thr	Gly	Asn	Asp	Ile	Gly	Glu	Arg	Asp
225					230					235					240
Lys	Ile	Thr	Glu	Asn	Pro	Val	Ser	Thr	Gly	Glu	Lys	Asn	Ala	Ala	Thr
				245					250					255	
Trp	Ser	Ile	Leu	Ala	Val	Leu	Cys	Leu	Leu	Val	Val	Val	Ala	Val	Ala
			260					265					270		
Ile	Gly	Trp	Val	Cys	Arg	Asp	Arg	Cys	Leu	Gln	His	Ser	Tyr	Ala	Gly
		275					280					285			
Ala	Trp	Ala	Val	Ser	Pro	Glu	Thr	Glu	Leu	Thr	Gly	His	Val		
	290					295					300				

<210> 18
<211> 302
<212> PRT
<213> Human

<400> 18

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Arg	Ala	Asp	Thr	Gln	Glu	Lys	Glu	Val	Arg	Ala	Met	Val	Gly	Ser	Asp
			20					25					30		
Val	Glu	Leu	Ser	Cys	Ala	Cys	Pro	Glu	Gly	Ser	Arg	Phe	Asp	Leu	Asn
		35					40					45			
Asp	Val	Tyr	Val	Tyr	Trp	Gln	Thr	Ser	Glu	Ser	Lys	Thr	Val	Val	Thr
	50					55					60				
Tyr	His	Ile	Pro	Gln	Asn	Ser	Ser	Leu	Glu	Asn	Val	Asp	Ser	Arg	Tyr
65					70					75					80
Arg	Asn	Arg	Ala	Leu	Met	Ser	Pro	Ala	Gly	Met	Leu	Arg	Gly	Asp	Phe
				85					90					95	
Ser	Leu	Arg	Leu	Phe	Asn	Val	Thr	Pro	Gln	Asp	Glu	Gln	Lys	Phe	His
			100					105					110		
Cys	Leu	Val	Leu	Ser	Gln	Ser	Leu	Gly	Phe	Gln	Glu	Val	Leu	Ser	Val
		115					120					125			
Glu	Val	Thr	Leu	His	Val	Ala	Ala	Asn	Phe	Ser	Val	Pro	Val	Val	Ser
	130					135					140				
Ala	Pro	His	Ser	Pro	Ser	Gln	Asp	Glu	Leu	Thr	Phe	Thr	Cys	Thr	Ser
145					150					155					160
Ile	Asn	Gly	Tyr	Pro	Arg	Pro	Asn	Val	Tyr	Trp	Ile	Asn	Lys	Thr	Asp
				165					170					175	
Asn	Ser	Leu	Leu	Asp	Gln	Ala	Leu	Gln	Asn	Asp	Thr	Val	Phe	Leu	Asn
		180						185					190		
Met	Arg	Gly	Leu	Tyr	Asp	Val	Val	Ser	Val	Leu	Arg	Ile	Ala	Arg	Thr
		195					200					205			
Pro	Ser	Val	Asn	Ile	Gly	Cys	Cys	Ile	Glu	Asn	Val	Leu	Leu	Gln	Gln
		210				215					220				
Asn	Leu	Thr	Val	Gly	Ser	Gln	Thr	Gly	Asn	Asp	Ile	Gly	Glu	Arg	Asp
225					230					235					240
Lys	Ile	Thr	Glu	Asn	Pro	Val	Ser	Thr	Gly	Glu	Lys	Asn	Ala	Ala	Thr
				245					250					255	
Trp	Ser	Ile	Leu	Ala	Val	Leu	Cys	Leu	Leu	Val	Val	Val	Ala	Val	Ala
		260						265					270		
Ile	Gly	Trp	Val	Cys	Arg	Asp	Arg	Cys	Leu	Gln	His	Ser	Tyr	Ala	Gly
	275						280					285			
Ala	Trp	Ala	Val	Ser	Pro	Glu	Thr	Glu	Leu	Thr	Gly	His	Val		
	290					295					300				

<210> 19
 <211> 322
 <212> PRT
 <213> mouse

<400> 19
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 Val Trp Lys Lys 20 Leu His Val Ser 25 Gly Phe Phe Ser 30 Gly Leu Gly
 Leu Phe Leu 35 Leu Leu Leu Ser 40 Leu Cys Ala Ala 45 Ser Ala Glu Thr
 Glu Val Gly 50 Ala Met Val Gly 55 Ser Asn Val Val Leu 60 Ser Cys Ile Asp
 Pro His Arg Arg His 70 Phe Asn Leu Ser Gly 75 Leu Tyr Val Tyr Trp Gln
 65 80
 Ile Glu Asn Pro 85 Glu Val Ser Val Thr Tyr 90 Tyr Leu Pro Tyr Lys Ser
 95
 Pro Gly Ile Asn 100 Val Asp Ser Ser Tyr 105 Lys Asn Arg Gly His Leu Ser
 110
 Leu Asp Ser 115 Met Lys Gln Gly 120 Asn Phe Ser Leu Tyr Leu 125 Lys Asn Val
 Thr Pro Gln Asp Thr Gln 135 Glu Phe Thr Cys Arg Val 140 Phe Met Asn Thr
 130
 Ala Thr Glu Leu Val 150 Lys Ile Leu Glu Glu Val 155 Val Arg Leu Arg Val
 145 160
 Ala Ala Asn Phe 165 Ser Thr Pro Val Ile Ser 170 Thr Ser Asp Ser Ser Asn
 175
 Pro Gly Gln Glu 180 Arg Thr Tyr Thr Cys 185 Met Ser Lys Asn Gly Tyr Pro
 190
 Glu Pro Asn Leu Tyr Trp Ile 200 Asn Thr Thr Asp Asn Ser 205 Leu Ile Asp
 195
 Thr Ala Leu Gln Asn Asn 215 Thr Val Tyr Leu Asn Lys 220 Leu Gly Leu Tyr
 210
 Asp Val Ile Ser Thr Leu 230 Arg Leu Pro Trp Thr 235 Ser Arg Gly Asp Val
 225 240
 Leu Cys Cys Val 245 Glu Asn Val Ala Leu His 250 Gln Asn Ile Thr Ser Ile
 255
 Ser Gln Ala Glu 260 Ser Phe Thr Gly Asn 265 Asn Thr Lys Asn Pro Gln Glu
 270
 Thr His Asn Asn Glu Leu Lys 280 Val Leu Val Pro Val Leu 285 Ala Val Leu
 275
 Ala Ala Ala Ala Phe Val 295 Ser Phe Ile Ile Tyr Arg 300 Arg Thr Arg Pro
 290

His Arg Ser Tyr Thr Gly Pro Lys Thr Val Gln Leu Glu Leu Thr Asp
305 310 315 320

His Ala

<210> 20
<211> 329
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Synthetic
Oglionucleotide

<400> 20
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Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Leu Xaa
20 25 30
Leu Phe Xaa Leu Leu Xaa Ser Ser Leu Xaa Ala Xaa Xaa Xaa Glu Xaa
35 40 45
Glu Val Xaa Ala Met Val Gly Ser Xaa Val Xaa Leu Ser Cys Xaa Xaa
50 55 60
Pro Xaa Xaa Xaa Xaa Phe Xaa Leu Xaa Xaa Xaa Tyr Val Tyr Trp Gln
65 70 75 80
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Val Thr Tyr Xaa Xaa Pro Xaa Xaa Ser
85 90 95
Xaa Xaa Xaa Asn Val Asp Ser Xaa Tyr Xaa Asn Arg Xaa Xaa Xaa Ser
100 105 110
Xaa Xaa Xaa Met Xaa Xaa Gly Xaa Phe Ser Leu Xaa Leu Xaa Asn Val
115 120 125
Thr Pro Gln Asp Xaa Gln Xaa Phe Xaa Cys Xaa Val Xaa Xaa Xaa Xaa
130 135 140
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Xaa Xaa Xaa Val Xaa Leu Xaa Val
145 150 155 160
Ala Ala Asn Phe Ser Xaa Pro Val Xaa Ser Xaa Xaa Xaa Ser Xaa Xaa
165 170 175
Xaa Xaa Xaa Glu Xaa Thr Xaa Thr Cys Xaa Ser Xaa Asn Gly Tyr Pro
180 185 190
Xaa Pro Asn Xaa Tyr Trp Ile Asn Xaa Thr Asp Asn Ser Leu Xaa Asp
195 200 205
Xaa Ala Leu Gln Asn Xaa Thr Val Xaa Leu Asn Xaa Xaa Gly Leu Tyr
210 215 220
Asp Val Xaa Ser Xaa Leu Arg Xaa Xaa Xaa Thr Xaa Xaa Xaa Xaa Xaa
225 230 235 240
Xaa Cys Cys Xaa Glu Asn Val Xaa Leu Xaa Gln Asn Xaa Thr Xaa Xaa

	245		250		255
Ser Gln Xaa	Xaa Xaa Xaa Xaa Gly	Xaa Xaa Xaa Lys	Xaa Xaa Xaa	Xaa Xaa Xaa	Xaa
	260		265		270
Xaa Xaa Xaa	Xaa Xaa Xaa Lys	Xaa Xaa Xaa Xaa	Xaa Xaa Xaa	Xaa Xaa Xaa	Leu Ala
	275		280		285
Val Leu Xaa	Xaa Xaa Xaa Xaa	Val Xaa Xaa Xaa	Ile Xaa Xaa Xaa	Xaa Xaa Xaa	Xaa
	290		295		300
Arg Xaa Arg	Xaa Xaa Xaa Xaa	Ser Tyr Xaa Gly	Xaa Xaa Xaa	Val Xaa	Xaa
	305		310		315
Xaa Glu Xaa	Xaa Xaa Leu Thr	Xaa His Xaa			
	325				

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 <211> 1370
 <212> DNA
 <213> Human
 <220>
 <221> 5'UTR
 <222> (1)..(165)
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 <221> CDS
 <222> (166)..(762)

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 tccgtgaaca ctgaacgcga ggactgttaa ctgtttctgg caaac atg aag tca ggc 177
 Met Lys Ser Gly
 1
 ctc tgg tat ttc ttt ctc ttc tgc ttg cgc att aaa gtt tta aca gga 225
 Leu Trp Tyr Phe Phe Leu Phe Cys Leu Arg Ile Lys Val Leu Thr Gly
 5 10 15 20
 gaa atc aat ggt tct gcc aat tat gag atg ttt ata ttt cac aac gga 273
 Glu Ile Asn Gly Ser Ala Asn Tyr Glu Met Phe Ile Phe His Asn Gly
 25 30 35
 ggt gta caa att tta tgc aaa tat cct gac att gtc cag caa ttt aaa 321
 Gly Val Gln Ile Leu Cys Lys Tyr Pro Asp Ile Val Gln Gln Phe Lys
 40 45 50
 atg cag ttg ctg aaa ggg ggg caa ata ctc tgc gat ctc act aag aca 369
 Met Gln Leu Leu Lys Gly Gly Gln Ile Leu Cys Asp Leu Thr Lys Thr
 55 60 65
 aaa gga agt gga aac aca gtg tcc att aag agt ctg aaa ttc tgc cat 417
 Lys Gly Ser Gly Asn Thr Val Ser Ile Lys Ser Leu Lys Phe Cys His
 70 75 80
 tct cag tta tcc aac aac agt gtc tct ttt ttt cta tac aac ttg gac 465
 Ser Gln Leu Ser Asn Asn Ser Val Ser Phe Phe Leu Tyr Asn Leu Asp
 85 90 95 100

cat tct cat gcc aac tat tac ttc tgc aac cta tca att ttt gat cct 513
His Ser His Ala Asn Tyr Tyr Phe Cys Asn Leu Ser Ile Phe Asp Pro 115
105 110

cct cct ttt aaa gta act ctt aca gga gga tat ttg cat att tat gaa 561
Pro Pro Phe Lys Val Thr Leu Thr Gly Gly Tyr Leu His Ile Tyr Glu 130
120 125

tca caa ctt tgt tgc cag ctg aag ttc tgg tta ccc ata gga tgt gca 609
Ser Gln Leu Cys Cys Gln Leu Lys Phe Trp Leu Pro Ile Gly Cys Ala 145
135 140

gcc ttt gtt gta gtc tgc att ttg gga tgc ata ctt att tgt tgg ctt 657
Ala Phe Val Val Val Cys Ile Leu Gly Cys Ile Leu Ile Cys Trp Leu 160
150 155

aca aaa aag aag tat tca tcc agt gtg cac gac cct aac ggt gaa tac 705
Thr Lys Lys Lys Tyr Ser Ser Ser Val His Asp Pro Asn Gly Glu Tyr 180
165 170 175

atg ttc atg aga gca gtg aac aca gcc aaa aaa tct aga ctc aca gat 753
Met Phe Met Arg Ala Val Asn Thr Ala Lys Lys Ser Arg Leu Thr Asp 195
185 190

gtg acc cta taatatggaa ctctggcacc caggcatgaa gcacgttggc 802
Val Thr Leu

cagtttttcct caacttgaag tgcaagattc tcttatttcc gggaccacgg agagtctgac 862

ttaactacat acatcttctg ctggtgtttt gttcaatctg gaagaatgac tgtatcagtc 922

aatggggatt ttaacagact gccttggtac tgccgagtc tctcaaaaca aacaccctct 982

tgcaaccagc tttggagaaa gccagctcc tgtgtgctca ctgggagtg aatccctgtc 1042

tcacatctg ctctagcag tgcacagcc agtaaaacaa acacatttac aagaaaaatg 1102

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atcagtcaag ggagatgctt caaagctgga gctattttat ttctgagatg ttgatgtgaa 1282

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Val Leu Thr Gly Glu Ile Asn Gly Ser Ala Asn Tyr Glu Met Phe Ile
20 25 30
Phe His Asn Gly Gly Val Gln Ile Leu Cys Lys Tyr Pro Asp Ile Val
35 40 45
Gln Gln Phe Lys Met Gln Leu Leu Lys Gly Gly Gln Ile Leu Cys Asp

50					55					60					
Leu 65	Thr	Lys	Thr	Lys	Gly 70	Ser	Gly	Asn	Thr	Val 75	Ser	Ile	Lys	Ser	Leu 80
Lys	Phe	Cys	His	Ser 85	Gln	Leu	Ser	Asn	Asn 90	Ser	Val	Ser	Phe	Phe	Leu 95
Tyr	Asn	Leu	Asp 100	His	Ser	His	Ala	Asn 105	Tyr	Tyr	Phe	Cys	Asn 110	Leu	Ser
Ile	Phe	Asp 115	Pro	Pro	Pro	Phe	Lys 120	Val	Thr	Leu	Thr	Gly 125	Gly	Tyr	Leu
His	Ile 130	Tyr	Glu	Ser	Gln	Leu 135	Cys	Cys	Gln	Leu	Lys 140	Phe	Trp	Leu	Pro
Ile 145	Gly	Cys	Ala	Ala	Phe 150	Val	Val	Val	Cys	Ile 155	Leu	Gly	Cys	Ile	Leu 160
Ile	Cys	Trp	Leu	Thr 165	Lys	Lys	Lys	Tyr	Ser 170	Ser	Ser	Val	His	Asp 175	Pro
Asn	Gly	Glu	Tyr 180	Met	Phe	Met	Arg	Ala 185	Val	Asn	Thr	Ala	Lys 190	Lys	Ser
Arg	Leu	Thr	Asp 195	Val	Thr	Leu									

<210> 23
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Met 1	Lys	Ser	Gly	Leu 5	Trp	Tyr	Phe	Phe	Leu 10	Phe	Cys	Leu	Arg	Ile 15	Lys
Val	Leu	Thr	Gly 20	Glu	Ile	Asn	Gly	Ser 25	Ala	Asn	Tyr	Glu	Met 30	Phe	Ile
Phe	His	Asn 35	Gly	Gly	Val	Gln 40	Ile	Leu	Cys	Lys	Tyr	Pro 45	Asp	Ile	Val
Gln 50	Gln	Phe	Lys	Met	Gln	Leu 55	Lys	Gly	Gly	Gln 60	Ile	Leu	Cys	Asp	
Leu 65	Thr	Lys	Thr	Lys	Gly 70	Ser	Gly	Asn	Thr	Val 75	Ser	Ile	Lys	Ser	Leu 80
Lys	Phe	Cys	His	Ser 85	Gln	Leu	Ser	Asn	Asn 90	Ser	Val	Ser	Phe	Phe	Leu 95
Tyr	Asn	Leu	Asp 100	His	Ser	His	Ala	Asn 105	Tyr	Tyr	Phe	Cys	Asn 110	Leu	Ser
Ile	Phe	Asp 115	Pro	Pro	Pro	Phe	Lys 120	Val	Thr	Leu	Thr	Gly 125	Gly	Tyr	Leu
His	Ile 130	Tyr	Glu	Ser	Gln	Leu 135	Cys	Cys	Gln	Leu	Lys 140	Phe	Trp	Leu	Pro

Ile	Gly	Cys	Ala	Ala	Phe	Val	Val	Val	Cys	Ile	Leu	Gly	Cys	Ile	Leu
145					150					155					160
Ile	Cys	Trp	Leu	Thr	Lys	Lys	Lys	Tyr	Ser	Ser	Ser	Val	His	Asp	Pro
				165					170					175	
Asn	Gly	Glu	Tyr	Met	Phe	Met	Arg	Ala	Val	Asn	Thr	Ala	Lys	Lys	Ser
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Leu	Leu	Thr	Gly	Glu	Ile	Asn	Gly	Ser	Ala	Asp	His	Arg	Met	Phe	Ser	
			20					25					30			
Phe	His	Asn	Gly	Gly	Val	Gln	Ile	Ser	Cys	Lys	Tyr	Pro	Glu	Thr	Val	
		35					40					45				
Gln	Gln	Leu	Lys	Met	Arg	Leu	Phe	Arg	Glu	Arg	Glu	Val	Leu	Cys	Glu	
	50					55					60					
Leu	Thr	Lys	Thr	Lys	Gly	Ser	Gly	Asn	Ala	Val	Ser	Ile	Lys	Asn	Pro	
65					70					75					80	
Met	Leu	Cys	Leu	Tyr	His	Leu	Ser	Asn	Asn	Ser	Val	Ser	Phe	Phe	Leu	
				85					90					95		
Asn	Asn	Pro	Asp	Ser	Ser	Gln	Gly	Ser	Tyr	Tyr	Phe	Cys	Ser	Leu	Ser	
			100					105					110			
Ile	Phe	Asp	Pro	Pro	Pro	Phe	Gln	Glu	Arg	Asn	Leu	Ser	Gly	Gly	Tyr	
		115					120					125				
Leu	His	Ile	Tyr	Glu	Ser	Gln	Leu	Cys	Cys	Gln	Leu	Lys	Leu	Trp	Leu	
	130					135					140					
Pro	Val	Gly	Cys	Ala	Ala	Phe	Val	Val	Val	Leu	Leu	Phe	Gly	Cys	Ile	
145				150						155					160	
Leu	Ile	Ile	Trp	Phe	Ser	Lys	Lys	Lys	Tyr	Gly	Ser	Ser	Val	His	Asp	
				165					170					175		
Pro	Asn	Ser	Glu	Tyr	Met	Phe	Met	Ala	Ala	Val	Asn	Thr	Asn	Lys	Lys	
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18

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